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ABSTRACT

A major purpose of this study was to establish and test a procedure for evaluating drug education curricula that allows for a more objective view of the effectiveness of drug education materials and the instructional delivery system. A major focus of the study was to determine the extent to which the Discover Curriculum affected student outcomes. Lessons at all grade levels were organized into three chapters with three major strands: self-esteem building and development of coping skills, drug information, and relationship skills and decision making. The total number of students involved in the study was 708. Student tests measured the three strands of the curriculum; survey forms elicited teachers' and parents' responses to the program. In general, teachers rated all three of the strands above average as related to student impact. The curriculum was seen as effective, with the strongest effects for younger students in grades K-2. According to student tests, however, there appeared to be some loss of retention after 4 months, particularly among the younger students. Most parents felt that their involvement in their child's drug prevention program was essential for it to be effective, and most noticed some attitude change regarding drugs and alcohol on the part of their children. Statistical analysis and survey results are given in several tables. (JD)

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EVALUATION OF THE DISCOVER DRUG EDUCATION CURRICULUM FOR GRADES K-4

an evaluation study by

PRIDE

Devoted to drug abuse prevention through education

presented by

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I. INTRODUCTION

Gallup Polls (1989) of the public's attitudes toward schools for the previous four years have reported student drug use as the number one problem facing the schools. Researchers and experts in drug prevention agree that prevention and education are key to solving the nation's drug problem. Hawley (1987) stated that drug use must be prevented before it has an opportunity to start. Adams (1987) reported that adolescents' perception of the dangerous health effects of drug use is related to their reported drug use behavior, a finding that supports the need for drug education.

There is agreement among most authorities that drug prevention efforts should begin early in a child's life and schools should start drug education at the lower elementary levels. Bleckman (1986) made a convincing argument for this position in a Washington Post article where he described a Fairfax County, Virginia drug education program beginning with five year old students.

The U.S. Department of Education reported in 1988 that 78 percent of the states mandate some form of drug education in schools. Drug education is also offered in districts where it is not required. In the same report, it was reported that only 34 percent of the states have adopted some form of state-wide drug prevention curriculum.

The U.S. Department of Education (1987) conducted a study of 15,000 school personnel to identify the most effective components of drug curricula. There was widespread agreement (66 %) among

the respondents that improving the self-concept and teaching the hazardous effects of drug use were believed to be the most influential activities. Fifty-five percent responded that it was important to teach students skills to resist peer pressure.

Goodstadt (1986) asserted that the level of knowledge about drugs is fairly easy to increase through programmatic teaching strategies. However, increasing knowledge is a necessary but not sufficient part of an effective drug prevention curricula. Behavior change, the real measure of an effective prevention strategy, takes more time and is more difficult to influence. For example, Tobler (1986), through the process of meta-analysis of 143 adolescent drug prevention program outcomes, supported the assertion that focusing on knowledge or the self-concept is not sufficient to change the behavior patterns of adolescents. It was concluded that the use of peer programs was found to demonstrate the greatest impact on changing drug using behavior of adolescents.

There are numerous drug prevention curricula on the market today, yet, few have been subjected to any evaluation process to support their claims of effectiveness. When evaluation studies were conducted, they most often lacked the rigorous procedures of randomness and control group comparisons, thus providing questionable findings of effectiveness. A major purpose of this study was to establish and test a procedure for evaluating drug education curricula that allows for a more objective view of the effectiveness of drug education materials and the instructional delivery system. The evaluation procedures reported here provide

for relatively controlled conditions to assess student change, teacher perceptions of the instructional materials and methods, and parent perceptions of drug prevention.

II. TREATMENT PROCEDURES

This study was conducted in a small southern town of approximately 30,000. The total number of students involved in this study was 708. Approximately 54 percent of the students were black and 42 percent were white. In the overall student body from which the sample was obtained, 66 percent of the students were on free/reduced cost meals. Of the 30 teachers who participated in this study, half held a masters degree and had six to ten years teaching experience. A fourth of the teachers held a bachelors degree with the remaining fourth having post masters degree hours.

The curriculum evaluated in this paper was the Discover Curriculum, an elementary school based drug education program published by Educational Assessment Publishing Company, San Diego, California in 1988. Authors were Merita L. Thompson and Johanna F. Strange. The curriculum consisted of student and teacher textbook editions, with student ancillaries and teacher supplements to assist in teaching the lessons.

The lessons at all grade levels were organized into three chapters with three major strands: self-esteem building and development of coping skills; drug information; and relationship skills and decision making. Teachers selected to be involved in

the program were given an outline of the evaluation project, briefed on the materials, and asked to follow the instructions that accompanied the curriculum. No other teacher training regarding use of materials was given to the teachers.

The materials were to be used at the teacher's discretion during the semester. At the completion of each chapter, teachers completed their evaluation forms and administered the student chapter tests. Parents were asked to complete questionnaires at the end of the semester. Approximately two-thirds of the teachers taught the curriculum as a separate unit while the other teachers taught it in conjunction with science or health.

Student tests were constructed to measure the three strands of the curriculum at each grade level. Teacher survey forms were also constructed around the strands and for the various components of the curriculum. Parent survey forms were less specific asking parents to respond to more generic questions about their perceptions and their child's behavior in the area of drug education.

III. EVALUATION PROCEDURES

This report describes a quantitative/qualitative evaluation design utilized in evaluating the Discover Curriculum. The quantitative measures were primarily student responses obtained from tests constructed to measure each of the three strands mentioned above; qualitative measures were obtained primarily from parents and teachers.

III.A. Student Assessment

All students involved in this study were tested at the end of each chapter using tests developed by the evaluators to assess the effectiveness of the Discover Curriculum. The test items were formulated from and based on the Curriculum's authors stated objectives as outlined in the Discover textbooks and teacher supplements. Student tests were reviewed by the Curriculum's authors and modifications were made prior to student administration. Other formal field testings of the student tests were not made.

A major focus of this study was to determine the extent to which the Discover Curriculum affected student outcomes. In effect, two designs were utilized in this assessment: a true experimental design and a pre-experimental design (defined by Stanley and Campbell, 1963). Also, a follow-up of the experimental group was obtained approximately four months after instruction was completed.

Six classes were randomly selected for each grade level K through 4th from existing classes in the Starkville School System. Three of the six classes were randomly selected at each level to receive the drug education lessons during the fall semester of 1988 and were designated in this report as the experimental group. The three classes that did not receive drug education during the fall, 1988, acted as a control group, and received the instruction during the spring semester of 1989.

All students were measured using the student assessment forms at the end of the fall, 1988 semester and again at the end of the spring, 1989 semester. Multiple t-ratios were computed to test differences among groups of students in this study. The authors recognize that this procedure of utilizing multiple t-ratios increased the probability of Type I error. None-the-less, it was felt that this straight forward approach was appropriate in this type study given the level of student, type of student assessment, and purpose of the study.

The fall, 1988 student data provided for a randomized post-test only true experimental design, comparing students having had the drug education instruction and students not having had this instruction. t-ratios were computed for each grade level and for each strand to determine any differences that may have existed among the two student groups.

Students in the control classes during the fall, 1988 were taught the drug education program in the spring, 1989. The student measures taken in the fall of 1988 served as a pre-test for scores obtained in the spring, 1989, thus, providing for a pre-post test or pre-experimental design for the control group. t-ratios were computed for students who had received the instruction in the fall of 1988. These students received post-tests in the fall of 1988 and were again tested in the spring of 1989. Thus, t-tests were computed to determine if there was a retention reduction over the spring semester.

III.B. Teacher and Parent Assessment

Teachers were surveyed as to their perception of the Discover Curriculum from its merit as being helpful to students, and its ease of use by teachers. They were asked to respond to each component of the curriculum to include student ancillaries and teacher supplements. Teachers rated each chapter of the Discover Curriculum on various criteria, gave an overall rating, and made comments about the materials.

Likewise, parents were surveyed by sending home questionnaires prepared by the evaluators that asked parents about their observations of their children and their own knowledge of the drug prevention efforts of the school. Teachers and parents were surveyed during the semester that their students were participating in the drug education curriculum.

Percentage data for teacher and parent ratings were computed for the various items and comments were categorized. Results of these analyses are discussed in the following sections.

IV. RESULTS OF THE STUDENT ASSESSMENT

As stated earlier, t-tests were used to determine if statistically significant mean differences were obtained between various combinations of student groupings. The alpha level of .05 was selected as the critical value to determine statistical significance in this study. Exact probabilities were reported for

t-ratios reaching the .05 level or less. It should be noted probabilities were computed for differences between sample variance estimates, and when the probability was less than or equal to .05, a t-ratio was computed that corrected for unequal variances.

IV.A. Experimental vs Control (First Semester Analyses)

The fall, 1988 data provided for t-test comparisons utilizing a randomized, two-group, post-test only experimental design (Stanley and Campbell, 1963). Experimental group means were compared to control group means for each unit test. These findings can be observed in Table IV.A.1. For Chapter One: Self Esteem, experimental group means were significantly greater than control group means for kindergarten, first grade, and fourth grade students. However, at the third grade, the control group mean was greater than the experimental group mean. No significant difference was found at the second grade.

Comparisons between experimental and control group means for Chapter Two: Knowledge provided significantly greater mean values for the experimental group in first and second grades with no significant differences found in the other three grades.

Analyses of the test results for Chapter Three: Decision Making produced significantly greater mean values for the experimental group at all grade levels except fourth grade where no significant difference was found. As can be seen from Table VI.A.2., nine of the experimental group means were significantly greater than the control group means with only one group mean having opposite results. Four of the t-ratios were non-

significant. These findings suggest that instruction using the Discover Curriculum resulted in desired student outcomes, particularly in the areas of self-esteem and decision making for grades K through 3. For grade four, only test results for the chapter on self-esteem produced statistically significant differences between the experimental and control groups.

IV.B. Follow-up of Experimental Group (Fall 88 to Spring 1989)

Students in the experimental group were tested in the fall of 1988 and in the spring of 1989. Mean scores from these administrations were compared to determine if there had been a change over the four months between test administrations. Table IV.B.1. contains the results of the t-ratios.

For kindergarten students there was a significant decrease in mean scores for self esteem, a significant increase in mean scores for knowledge, and no difference for decision making. For first grade students there was significant mean decreases in knowledge and decision making with no difference in self esteem means. For second grade students there were no significant differences between post test and follow-up means on any of the three dependent variables. Third grade had a significant increase in mean value for self esteem, no significant difference on knowledge, and a decrease in decision making means from post-test mean to follow-up mean values. Fourth grade students had no significant mean differences over the two test periods on any of the three dependent variables.

These findings suggest that for many students there was a

decrease in mean scores after four months. These data further suggest that there needs to be a continuation of instruction or "refresher" activities during the semester following the lessons. This seems particularly important for kindergarten and first grade students.

IV.C. Pre-test/Post-test Comparisons of Control Group

The control group was used in a pre-test/post-test comparison study. Pre-test data were collected at the end of the first semester and post-test data were obtained at the end of the second semester after students had completed the lessons in the Discover Curriculum. Two-thirds of the fifteen t-ratios showed significant increases in post-test mean values over pre-test mean values, certainly more than could be expected by chance occurrence. Table IV.C.1. contains information on these comparisons.

Of course there are numerous threats to internal validity using this type of design. Again borrowing from Stanley and Campbell (1963), "Maturation" (the maturing of the students), may have played a major part in these mean increases, particularly

TABLE IV.A.1.
Student Comparisons (t-ratios) for First Semester
Experimental vs. Control

Chapter One: Self Esteem

	Total n-size	Exp. Mean	Control Mean	t-ratio	df	Prob.
Kindergarten	161	3.49	2.39	7.53	159.0	<.001
First Grade	121	4.65	4.25	2.61	112.1	.010*
Second Grade	120	4.05	4.05	0.01	112.2	N/S*
Third Grade	150	6.58	7.01	2.21	148.0	.028
Fourth Grade	153	10.40	9.32	4.51	151.0	<.001

Chapter Two: Knowledge

	Total n-size	Exp. Mean	Control Mean	t-ratio	df	Prob.
Kindergarten	161	3.16	3.15	0.06	148.7	N/S*
First Grade	124	5.48	4.31	4.67	105.9	<.001*
Second Grade	120	5.88	5.32	2.21	118.0	.029
Third Grade	149	8.08	8.35	1.13	147.0	N/S
Fourth Grade	147	18.64	18.08	1.20	121.2	N/S*

Chapter Three: Decision Making

	Total n-size	Exp. Mean	Control Mean	t-ratio	df	Prob.
Kindergarten	153	2.47	2.00	3.77	151.0	<.001
First Grade	121	3.93	3.20	5.50	66.1	<.001*
Second Grade	120	3.29	2.90	2.46	118.0	.015
Third Grade	149	5.83	5.35	3.69	112.4	<.001*
Fourth Grade	146	11.56	11.00	1.61	144.0	N/S

* Corrected for unequal variance estimates

TABLE VI.A.2.
Contrast of t-ratio Probabilities by Grade Level
For Experimental and Control Groups

	Chapter		
	One	Two	Three
Kindergarten	<.001	NS	<.001
First	.010	<.001	<.001
Second	NS	.029	.015
Third	-.028	NS	<.001
Fourth	<.001	NS	NS

for this level student. Also, "History" (the lack of control of intervening variables such as other education programing, assembly programs, TV, etc.) could explain these increases. However, when these data are viewed in light of the experimental and control group comparisons obtained in the first semester, the most likely explanation for the increases in mean values was the students participation in and exposure to the lessons taught using the Discover Curriculum.

Table IV.C.2 was constructed to better view the pattern of t-ratios by chapter and grade level. All grades had significant improvement for Chapter One except first grade. These findings suggest that the self-esteem part of the curriculum was effective with both the older and younger elementary level students. Chapter Two: Knowledge appeared to be most effective with younger students, kindergarten through second grade. Third and fourth grade students did not have significant mean increases. It was noted earlier that

TABLE IV.B.1.
Student Comparisons (t-ratios) for Experimental Group
1st Semester vs. 2nd Semester Tests

Chapter One: Self Esteem

	Total n-size	1st Mean	2nd Mean	t-ratio	df	Prob.
Kindergarten	164	3.49	2.72	5.24	153.3	<.001*
First Grade	120	4.65	4.68	0.27	115.1	N/S*
Second Grade	123	4.05	4.33	1.68	117.8	N/S*
Third Grade	148	6.58	6.97	1.97	146.0	.050
Fourth Grade	154	10.40	10.31	0.33	152.0	N/S

Chapter Two: Knowledge

	Total n-size	1st Mean	2nd Mean	t-ratio	df	Prob.
Kindergarten	161	3.16	3.51	2.13	135.9	.035*
First Grade	123	5.48	4.95	2.46	121.0	.015
Second Grade	123	5.88	6.02	0.60	121.0	N/S
Third Grade	147	8.08	8.23	0.66	145.0	N/S
Fourth Grade	149	18.64	19.09	0.95	126.1	N/S*

Chapter Three: Decision Making

	Total n-size	1st Mean	2nd Mean	t-ratio	df	Prob.
Kindergarten	156	2.47	2.44	0.18	154.0	N/S
First Grade	122	3.93	3.51	3.84	70.8	<.001*
Second Grade	124	3.29	3.29	0.03	122.0	N/S
Third Grade	147	5.83	5.53	2.88	130.7	.005*
Fourth Grade	154	11.56	11.22	1.11	152.0	N/S

* Corrected for unequal variance estimates

TABLE IV.C.1.
Student Comparisons (t-ratios) for Control Group
1st Semester vs. 2nd Semester Tests

Chapter One: Self Esteem

	Total n-size	1st Mean	2nd Mean	t-ratio	df	Prob.
Kindergarten	155	2.39	2.92	3.36	153.0	.001
First Grade	122	4.25	4.48	1.28	120.0	N/S
Second Grade	124	4.05	4.41	2.24	107.5	.027*
Third Grade	154	7.01	7.66	3.85	152.0	<.001
Fourth Grade	152	9.33	10.09	3.11	150.0	.002

Chapter Two: Knowledge

	Total n-size	1st Mean	2nd Mean	t-ratio	df	Prob.
Kindergarten	161	3.15	3.49	2.53	159.0	.013
First Grade	123	4.31	5.48	4.85	96.0	<.001*
Second Grade	124	5.33	5.97	2.66	122.0	.009
Third Grade	152	8.35	8.56	1.03	124.0	N/S*
Fourth Grade	148	18.08	17.67	0.81	114.6	N/S*

Chapter Three: Decision Making

	Total n-size	1st Mean	2nd Mean	t-ratio	df	Prob.
Kindergarten	156	2.00	2.58	4.54	154.0	<.001
First Grade	121	3.20	3.72	3.62	85.0	<.001*
Second Grade	124	2.90	3.19	1.75	122.0	N/S
Third Grade	152	5.35	5.48	0.85	150.0	N/S
Fourth Grade	145	11.00	11.80	2.32	143.0	.022

* Corrected for unequal variance estimates

no significant differences were found between the third and fourth grade experimental and control groups on the "knowledge" tests (See of Chapter Two may need closer examination. t-ratio results for Chapter Three: Decision Making did not have as clear-cut results. Again the younger students in kindergarten and first grade had significant mean gains. Second and third grade student mean gains were not enough to reach the .05 level of significance. However, the fourth grade students also had significant mean gains. Since the direction of the mean values were consistent, i.e., increasing from pre-test to post-test, the lessons on decision-making apparently had an effect on the students, with the younger students probably benefiting most.

TABLE VI.C.2.
Contrast of t-ratio Probabilities by Grade Level
For Pre-test/Post-test Comparisons of Control Group

	Chapter		
	One	Two	Three
Kindergarten	.001	.013	<.001
First	NS	<.001*	<.001*
Second	.027*	.009	NS
Third	<.001	NS*	NS
Fourth	.002	NS*	.022

V. RESULTS OF THE TEACHER AND PARENT SURVEY

Teachers and parents of the students were surveyed as part of the evaluation system. Teachers were asked to respond to questions about the effectiveness of the curriculum materials and parents were asked about their perceptions of drug prevention as related to their children.

V.A. Results of the Teacher Survey

Data from 30 teacher questionnaires comprised the teacher response information. The participating teachers were from kindergarten through fourth grade, six at each grade level. Two-thirds of the teachers reported teaching the lessons as a separate unit and the remaining teachers used the curriculum in conjunction with science or health lessons.

The questionnaire was designed to determine the teacher's perception of the ease of use and the impact of the materials in the Discover Curriculum. It was constructed in individual sections by chapter and color coded for ease of identification. Teachers were asked to complete the appropriate section of the questionnaire after completing a chapter. The overall evaluation of the materials was done at the conclusion of all chapters of the curriculum. A rating scale of "1" to "4" was utilized to obtain teacher perceptions about various aspects of the curriculum. All questionnaires were collected at the end of each semester for participating teachers.

For this report the teacher questionnaire data were examined

through using frequency distributions of the responses to items. Tables were constructed that included the percent of teachers reporting a "3" or "4" rating to each item on the questionnaire. These percentage data were interpreted as the proportion of teachers who perceived the items and ultimately the curriculum as positive.

Table V.A.1 contains the percentages of teachers who gave the items on Chapter One: Self-Esteem a "3" or "4" rating. Items in Section A dealt with the teacher's perception of students' understanding and attitude as related to the lessons. Section B addresses the teachers' perception of the curriculum materials for that specific chapter. As can be observed the ratings for student behavior were varied, ranging from 56.7 percent on the student's problem-solving ability after the lessons, to 96.6 percent for student interest in lessons. The teachers generally perceived that students accomplished the cognitive objectives of the lessons more completely than the attitudinal objectives. A greater percentage of teachers rated the qualities of the materials higher than student behavior. However, the item B.1. dealing with appropriateness of the material for the grade level was rated lower than other items (66.6%) and may be an area that could use some review.

The teacher responses were more favorable for Chapter Two questions dealing with knowledge about drugs. Table V.A.2. contains the percentage data for these items. They ranged from 70.0 percent on the students ability to read and understand the

materials to 100.0 percent on three items, risks of drug use; interest in lessons; and student enjoyment of lessons. Six of the ten items were 90 percent positive responses or greater. The Chapter Two materials also received good marks by most teachers ranging from 70.0 percent for appropriateness to 93.3 percent for ease of use.

Ratings of items in Chapter Three dealing with teacher perceptions of student outcomes regarding decision making were mostly positive. The item receiving the fewest positive ratings was student improvement in problem-solving (73.3%) with the highest percent of teacher positive ratings obtained for the items of student interest in and enjoyment of the lessons (96.7%). Chapter Three materials also received high ratings by the teachers with three out of four items receiving a "3" or "4" rating by 90 percent or more of the teachers. Table V.A.3. contains these percentage data for Chapter Three.

After completing all chapter lessons, teachers were asked to rate the specific materials contained in the Discover Curriculum regarding their useability. Teachers consistently rated the materials positively at all grade levels. The scale used was 0 (not used), 1 (poor), 2 (average), 3 (above average), and 4 (excellent). The two areas rated were "Teacher Support System Components" and the "Teacher's Manual Components."

Ratings for items of the teacher support system varied widely, ranging from 34.4 percent for Overhead Transparencies to 86.6 percent for the Chapter and Unit Tests. Instructional Tip Sheets

and the Fact Sheets were also rated highly. About half the teachers liked the Application Worksheets and Student Home Worksheets, with Vocabulary Worksheets receiving slightly higher ratings (60.0%).

The Teacher's Manual components received much higher ratings from the teachers than the teacher support materials. The manual sections on "Motivation" and "Teaching the Pages" received particularly high ratings (93.3%). "Lesson at a Glance" and "Reinforcement" were also popular sections with teacher ratings of 86.7 percent and 83.4 percent, respectively. The component, "Extension Connection" was rated positively by fewer teachers (58.6%) and may be an area for review by publishers.

As part of the evaluation process teachers were given an opportunity to write comments about the materials. Basically, teachers' written responses to the survey were very supportive of the Discover Curriculum materials. They felt by and large the materials were appropriate for the various grade levels although the kindergarten teachers recommended that the materials at this level be adapted to a developmental approach of teaching rather than the use of paper and pencil tasks. Teachers also suggested the need to incorporate the use of more media materials in the teaching of the lessons.

TABLE V.A.1.
Percent of Teachers Giving a "3" or "4" Rating
To Items on Chapter One: Self-Esteem

A. Student Understanding and Attitude	%
Q. 1. Influence on Self-Esteem	63.3
Q. 2. Problem Solving	56.7
Q. 3. Lesson Concepts	93.4
Q. 4. Human Feelings	93.1
Q. 5. Attitude Toward Mistakes	80.0
Q. 6. Attitude Toward Other Students	66.6
Q. 7. Attitude Toward Teacher	60.0
Q. 8. Lesson Concepts	90.0
Q. 9. Interested in Lessons	96.6
Q.10. Ability to Read and Understand Lessons	80.0
B. Materials Used	
Q. 1. Appropriate	66.6
Q. 2. Interesting Application Activities	86.7
Q. 3. Reinforced Skill Development	76.6
Q. 4. Enjoyable for You to Use	86.7
Q. 5. Easily Understood by You	96.6
Q. 6. Easy to Use	83.3

TABLE V.A.2.
Percent of Teachers Giving a "3" or "4" Rating
To Items on Chapter Two: Knowledge

A. Student Understanding and Attitude	%
Q. 1. Harmful Effects of Drugs	96.6
Q. 2. Risks of Drug Use	100.0
Q. 3. Nature of Dependency	80.0
Q. 4. Medical vs. Non-medical Drug Use	86.6
Q. 5. Interested in Lessons	100.0
Q. 6. Understood Lesson Content	90.0
Q. 7. Attitude Drug Use	90.0
Q. 8. Satisfied Curiosity About Drug Use	89.6
Q. 9. Ability to Read and Understand Lessons	70.0
Q.10. Enjoyed Lessons	100.0
B. Materials Used	
Q. 1. Appropriate	70.0
Q. 2. Enjoyable for You to Use	86.6
Q. 3. Easily Understood by You	90.0
Q. 4. Easy to Use	93.3

TABLE V.A.3.
Percent of Teachers Giving a "3" or "4" Rating
To Items on Chapter Three: Decision Making

A. Student Understanding and Attitude	%
Q. 1. Influence on Decision Making	80.0
Q. 2. Healthy Decisions Regarding Drug Use	80.0
Q. 3. Dealing with Peer Pressure	80.0
Q. 4. Improved Problem-solving	73.3
Q. 5. Decisions affect others	83.3
Q. 6. Interested in Lessons	96.7
Q. 7. Enjoyed Lessons	96.7
Q. 8. Understood Concepts	93.3
Q. 9. Improved Attitudes Toward Non-drug Use	93.4
Q.10. Able to Make Good Decision About Drug Use	93.1
B. Materials Used	
Q. 1. Appropriate	80.0
Q. 2. Enjoyable for You to Use	90.0
Q. 3. Easily Understood by You	93.4
Q. 4. Easy to Use	96.4

TABLE V.A.4.
Overall Evaluation of Discover Curriculum
Teacher Summaries

Teacher Support System Components	%
Q. 1. Application Worksheet	53.3
Q. 2. Student Home Worksheet	50.0
Q. 3. Vocabulary Worksheet	60.0
Q. 4. Chapter and Unit Tests	86.6
Q. 5. Overhead Transparencies	34.4
Q. 6. Guide to Overhead Transparencies	37.9
Q. 7. Instruction Tip Sheet	83.3
Q. 8. Fact Sheets	83.3
Teacher's Manual Components	
Q. 1. Lesson at a Glance	86.7
Q. 2. Motivation	93.4
Q. 3. Teaching the Pages	93.3
Q. 4. Reinforcement	83.4
Q. 5. Enrichment	75.8
Q. 6. Extension Connection	58.6

V.B. Results of the Parent Survey

There were 472 parent responses returned for the five grade levels. Of this number, 86.3 percent of the questions were completed by mothers. The parent sample generally reflected the same racial demographics as the student sample with 51.8 percent Black, and 34.0 percent White. The parent questionnaire asked questions about knowledge of and attitude toward the school's drug education program and parent involvement with their child in drug prevention. The results from the parent survey are contained in Table V.B.1.

The parent data suggested that nearly a fourth of the parents (24%) were not aware of the drug education program in the school and nearly a fourth (23.7%) were fully aware of the program. Almost three-fourths (72.4%) indicated that their child shared drug information with them at home. Also, the majority of parents (57.9%) felt that the drug education program was effective in producing a greater understanding about the beneficial versus the harmful use of drugs. Almost 85 percent of the parents felt the drug education program will be helpful in preventing their child's use of drugs.

About two-thirds of the parents noticed some change in the attitude of their child toward drugs and alcohol. Most parents discuss drug and alcohol abuse with their children with nearly 40 percent doing so "Frequently." Nearly 85 percent of the parents feel that parental involvement in their child's drug prevention program is "Essential" for it to be effective.

TABLE V.B.1.
Percent of Parent Responses to "Parent Questionnaire" Items

Q.1. Do you know about the drug education program in the school?

Not Aware	Somewhat Aware	Fully Aware
24.0	52.3	23.7

Q.2. Has your child shared drug information with you at home?

No	Yes
27.6	72.4

Q.3. Do you think your child has a greater understanding about how drugs can be helpful as medicine or harmful otherwise?

Generally No	Somewhat	Very Much
7.9	34.2	57.9

Q.4. Have you noticed a change in the attitude of your child regarding drugs and alcohol in the past few weeks?

No Change	Some Change	Definite Change
35.4	42.2	22.3

Q.5. Do you think the drug education program at school will help your child to avoid the harmful use of drugs?

Probably Not	I'm Not Sure	Yes, It Will Help
1.5	13.7	84.8

Q.6. Do you discuss the use of drugs and alcohol with your child?

Never	Sometimes	Frequently
4.4	55.7	39.4

Q.7. Do you feel that parent involvement is important in drug abuse education and prevention?

Not Important	Somewhat Important	Essential
1.6	14.2	84.3

VI. SUMMARY AND RECOMMENDATIONS

VI.A. Summary Student Findings

Findings from the experimental vs. control group and the pre-test/post-test components of this study provided consistent evidence that the Discover Curriculum was effective in producing desired results with students taught in grades kindergarten through fourth grade. The strongest effects appeared to be for younger students in grades kindergarten through second grade. For the older third and fourth graders, the chapters on self-esteem and decision-making were most effective with little change being demonstrated for the knowledge chapter.

There appeared to be some loss of retention after four months with the experimental group students, particularly for the younger students. This finding suggests that drug education may need to be a continuous year-long process for this level child.

VI.B. Summary of Teacher and Parent Survey

In general, teachers rated all three of the chapters above average as related to student impact, with Chapter Two: Knowledge and Chapter Three: Decision Making receiving the highest rankings. The area of the curriculum that appeared to have the greatest effect on students from the teacher's viewpoint was the understanding of the content and concepts within the lessons and the interest and enjoyment of students. Reading level of the material and student attitudinal change received somewhat less favorable teacher ratings.

Teachers gave the curriculum materials used in each chapter high ratings. However, some teachers had reservations about the "Appropriateness" of the materials for the specific grade level, indicating an area for further study and development, particularly at the lower grade levels. Teachers also rated the specific components of the teacher support system and the teacher's manual. The overhead transparencies received the least favorable ratings by teachers with unit tests rated the highest. The teacher's manual received high marks regarding useability from most teachers.

While approximately a fourth of the parents were not aware of the school's drug education program (24%), most felt that it was beneficial to their child (84.4%). Also, most parents (84.3%) felt that their involvement in their child's drug prevention program was essential for it to be effective, and most (95.6%) had some discussion with their child about drug and alcohol abuse. About two-thirds of the parents noticed some attitude change regarding drugs and alcohol within the past few weeks.

VI.C. Recommendations

The following recommendations were formulated from the overall evaluation of the Discover Curriculum. The order of the recommendations stated does not represent a priority listing.

1. Replicate this evaluation of the Discover Curriculum with other populations of students, teachers, and parents.
2. Review Chapter Two for relevant content for third and fourth grade students and the tests utilized for these grades as they relate to the content.
3. Continue drug education activities and review drug education concepts and content all school year.

4. Review areas where fewer teachers gave high ratings of the content especially as related to student attitudes and lesson content.

5. Develop additional visuals (videos, tapes, etc.) for K-4 levels.

6. Consider giving teacher training for integrating the Discover Curriculum into the present curriculum.

7. Revise the kindergarten worksheets to address non-readers.

8. Attempt to involve parents to a greater degree.

9. Increase emphasis placed on teaching refusal skills in the curriculum.

10. Consider doing a longitudinal follow-up study to measure the behaviors and attitudes of the students over time.

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Table V.B.1
Person Completing Parent Form

	Mother	Father	Other
Kindergarten	85.4	13.5	1.1
First Grade	87.6	8.6	3.7
Second Grade	92.1	6.6	1.3
Third Grade	86.7	7.8	5.6
Fourth Grade	81.6	14.6	3.9
Total	86.3	10.5	3.2

Race of Student as Reported by Parent

	Asian	Black	Hispanic	Nat. American	White
Kindergarten	5.3	49.5	2.1	17.9	25.3
First Grade	4.8	56.6	1.2	14.5	22.9
Second Grade	5.3	53.3	1.3	1.3	38.7
Third Grade	2.1	56.8	1.1	1.1	38.9
Fourth Grade	6.9	44.1	2.9	2.9	43.1
Total	4.9	51.8	1.8	7.6	34.0

TABLE V.B.1.
Parent Response to: "Do you know about the drug education program in your child's school?"

	Not Aware	Somewhat Aware	Fully Aware
Kindergarten	36.5	50.0	13.5
First Grade	18.1	61.4	20.5
Second Grade	29.9	50.6	19.5
Third Grade	18.9	53.7	27.4
Fourth Grade	19.3	47.1	35.6
Total	24.0	52.3	23.7

Has your child shared drug information with you at home?

	No	Yes
Kindergarten	44.8	55.2
First Grade	27.7	72.3
Second Grade	36.4	63.3
Third Grade	17.7	82.3
Fourth Grade	14.4	85.6
Total	27.6	72.4

After taking the drug education program, do you think your child has a greater understanding about how drugs can be helpful as medicine and harmful when taken otherwise?

	Generally No	Somewhat	Very Much
Kindergarten	19.8	38.5	41.8
First Grade	3.7	34.6	61.7
Second Grade	8.0	40.0	52.0
Third Grade	6.5	38.7	54.8
Fourth Grade	2.0	21.6	76.5
Total	7.9	34.2	57.9

Have you noticed a change in the attitude of your child regarding drugs and alcohol in the past few weeks?

	No change	Some change	Definite change
Kindergarten	41.1	43.2	15.8
First Grade	32.5	42.2	25.3
Second Grade	34.2	35.6	30.1
Third Grade	41.8	44.0	14.3
Fourth Grade	27.7	44.6	27.7
Total	35.4	42.2	22.3

Do you think the drug education program at school will help you teach your child to avoid the harmful use of drugs?

	Probably not	I'm not sure	Yes,it will help
Kindergarten	0.0	16.7	83.3
First Grade	1.2	15.7	83.1
Second Grade	3.9	3.9	92.1
Third Grade	1.1	17.0	81.9
Fourth Grade	1.9	13.5	84.6
Total	1.5	13.7	84.8

Do you discuss the use of drugs and alcohol with your child?

	Never	Sometimes	Frequently
Kindergarten	9.4	55.2	35.4
First Grade	2.4	60.2	37.3
Second Grade	3.9	46.8	49.4
Third Grade	5.3	60.0	34.7
Fourth Grade	2.9	55.3	41.7
Total	4.4	55.7	39.4

Do you feel parent involvement is important in drug abuse education and prevention?

	Not important	Somewhat important	Essential
Kindergarten	1.0	15.6	83.3
First Grade	1.2	10.8	88.0
Second Grade	1.3	12.0	86.7
Third Grade	3.2	13.8	83.0
Fourth Grade	1.0	17.5	81.6
Total	1.6	14.2	84.3